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ABSTRACT

Information on job requirements, educational requirements, and career possibilities for careers in forestry, conservation, ecology, and environmental management are explained in this booklet. A list of other sources of information on these occupations is also provided. (TA)

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CAREER PROFILES
in
FORESTRY
CONSERVATION
ECOLOGY
ENVIRONMENTAL MANAGEMENT

U.S. DEPARTMENT OF HEALTH,
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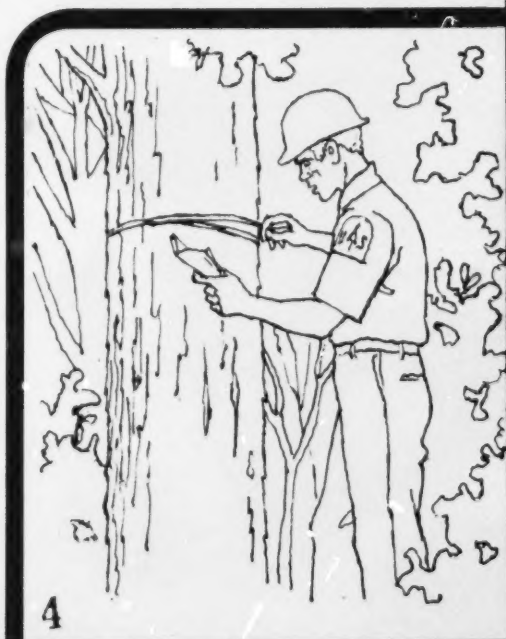
We in the Forest Service are approached countless times each year by young men and women with the query, "I want to be a forest ranger—how do I go about it?" That question might be met with another question—"What are your qualifications for being a forest ranger?" Or with a series of questions—"First, tell me what do you think a forest ranger is? What do you think he does? Do you really want to be a forest ranger, or another kind of conservationist, ecologist, or environmental manager? Do you want to be a park ranger, or game warden, a soil conservationist, or park recreationist?"

By this time, the inquirer usually says, "Well, I am not really sure." To clarify matters, this booklet will explain some of the job differences and career possibilities in forestry-related fields, and provide a list of other sources of information on these occupations.

forestry



To begin with, most rangers are foresters; but not all foresters are rangers. It is correct to speak of all uniformed employees in the National Park Service of the U.S. Department of the Interior as park rangers. But in the Forest Service, U.S. Department of Agriculture, not all uniformed employees may properly be called forest rangers, or even rangers. In the USDA Forest Service, the title "district ranger" applies to one who has reached a high level on the "career ladder," and is the administrator or manager of a large area of National Forest land, perhaps 100,000 acres or more. He trained for the job with at least 4 years of college work, and usually has technicians and other specialists plus junior foresters working with him.

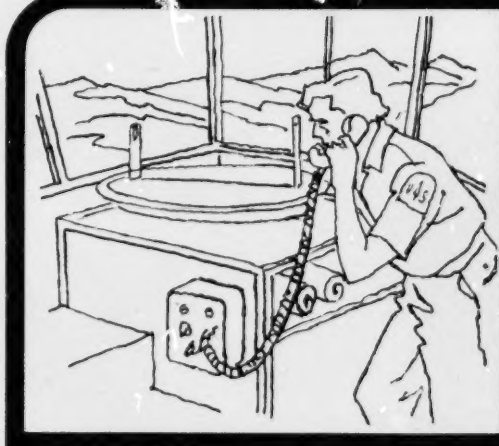


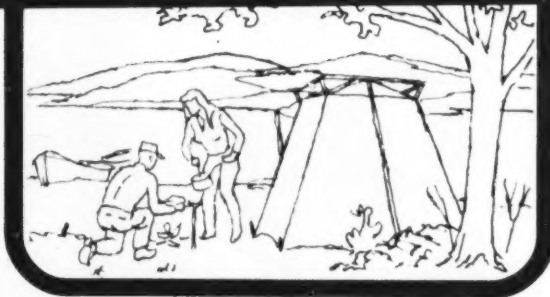
Forestry has been defined as "the science, art, and practice of managing and using for human benefit the natural resources which occur on and in association with forest lands."

A forester may be an expert on the interrelationship of forest soil, air, water, trees and other plants, wildlife, and domestic animals. Some foresters direct land surveys, road construction, and the planting and harvesting of trees. Others know the economics of forestry. Still others are skilled in preventing and stopping damage to forest resources from insects, diseases, and fires. Foresters plan and prescribe forest land uses and practices. In performing these and other functions, the forester is always working with people. He may supervise timber harvesting crews, firefighters, and tree planters. Some foresters administer private forest properties, public lands, or forest company holdings. Others are engaged in research or teach forestry.

Foresters are employed by Federal, State, county, and municipal governments. They also serve in universities and schools, forest products companies, industrial associations, and citizen's organizations. Many are forest consultants. Jobs with the Forest Service of the U.S. Department of Agriculture come under the Federal Civil Service. Appointments to Civil Service jobs are based on qualifications without regard to race, sex, creed, color, or national origin. Promotional and development opportunities are also open to all qualified individuals.

Anyone who is entitled to be called, correctly, a "forester," is a professional. A forester has at least a bachelor's degree in forestry. Many have masters' degrees and Ph. D.'s. A forester's





education includes study in the biological, physical, and social sciences. He acquires professional knowledge by intensive study of ecology, forest economics, forest protection, silviculture, resources management and use, dendrology, forest measurements, forest policy, and forest administration.

A love of hunting, fishing, camping, and the outdoors is the reason many young people give for wanting to be foresters. Certainly a liking for the outdoors is an important requisite for a forest worker who may be called upon to spend much time in the woods. A forester may have to live and work in remote areas and under primitive conditions. Anyone who would be unhappy or uncomfortable in such an environment, or who would be uninterested in his forest surroundings, should not be a forester.

However, it takes more than just a liking for the outdoors to make a forester, although some experience in hunting and fishing may prove useful. What is essential is a good background knowledge of the arts and sciences involved in forestry: first, the basic fields of language, communication, and culture that enable a forester to deal with other knowledgeable men; and second, specialized knowledge in the biological and physical sciences and engineering skills he will use in his work.

Other forest workers.—In medicine and dentistry, much of the work is done by technicians or others who are not doctors. In forestry, too, much of the work on forest lands is done by persons who are not professional foresters. There is a great need for a competent staff of technicians, aides, skilled workers,

clerical personnel, and laborers to assist management in all phases of its work. Skilled technicians might serve as fire dispatchers, timber cruisers, log scalers, recreation area custodians, survey party chiefs, road crew foremen, and for many other kinds of work. Forestry aides are needed as smokechasers, smokejumpers, recreation guards, tree nursery aides, research aides and the like. Other skilled workers are needed as bulldozer operators, parachute packers, carpenters, welders, electricians, mechanics, cooks, payroll clerks, warehousemen. A great number of laborers are needed on tree planting crews, road and trail crews, and timber stand improvement crews.

Several schools offer subprofessional training for jobs such as forestry aides or forestry technicians. Combining technical training and continuous field work, students learn by doing. There are both 1-year and 2-year schools, and even correspondence schools. The latter, however, do not count toward the basic education required for forestry aide or technician. Whatever your interest, write directly to the school of your choice about courses offered and entry requirements, as well as scholarship information, job opportunities, and other financial aids.

Valuable experience can be gained through summer employment in a forest or park environment. Those interested in forestry or a related career, and who are 18 years old, should seek summer work of this type to help them determine if they really want a career in forestry. However, summer jobs with the Forest Service are few and competition is very keen for those jobs. Many individuals apply who have had previous work experience and college education.





conservation

Conservation is a word that means many things. We think of it as the wise use of our natural resources. But it is more than that—it is a way of approaching those resources—a philosophy and a way of life concerned with our daily and long-range needs. That is why the conservationist, be he forester, soil scientist, range manager, wildlife manager, researcher, or whatever, is one of the most important persons in our society.

Conservationists deal with both renewable and nonrenewable resources. Man, with his advanced technology, can do many things to change the face of the earth and to utilize its resources. But he cannot make more coal or oil. These are among the non-renewable resources. When such resources are used up, they are gone forever.

Resources such as trees, grass, and wildlife, on the other hand, are renewable. When trees are harvested, more can be grown to replace them. When grass is eaten by livestock and game animals, more grass can be grown. Animals can reproduce themselves, unless, of course, conditions become so adverse a species becomes extinct.

The conservationist deals with all these resources—plus water, soil, people, crops, air, sunshine—all the elements of life itself. You can be a conservationist and play a very important role in our society. Conservation is such a diversified field that one who is concerned about the total environment can find a rewarding vocation in it.

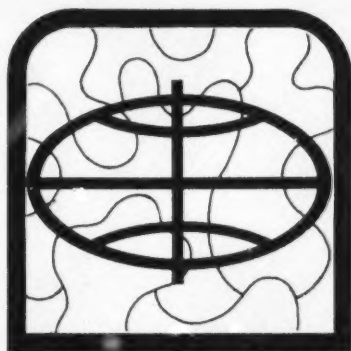
Professional work in natural-resources conservation takes a lot of serious preparation. Most universities and colleges offer

courses in biological sciences as a normal part of their curricula. Such courses have increased considerably in recent years, and some institutions have even added Departments of Natural Resources. A bachelor's degree from such an institution will qualify you to start in many types of positions involving surveys, land and water management, habitat improvement work, assistance to experienced research personnel, and many other conservation activities.

No conservation field force can be complete without the assistants who work with wildlife managers, fisheries crews, refuge managers, biologists, and others. Such aides, whose formal education often terminated with high school graduation, are not directly responsible for administration, management, or research, but may help in all three. They often have farming backgrounds and a deep interest in nature. Their work is usually hard, interesting, and widely varied. Much depends on their judgement, skill, and willingness to work and learn. They are actually extensions of the biologists and other scientists and work shoulder to shoulder with those men and women.

Salaries for most conservationists are guided by the Civil Service schedules of public agencies which have the majority of positions. Salaries are adequate, but not high in comparison to some occupations. A major additional compensation to the dedicated worker is the personal satisfaction received, the privilege that one often has of close kinship with the outdoors, and the knowledge that he is playing a vital part in the wise custodianship of our natural resources.





ecology

The Ecological Society of America says, "The field of ecology—involving the functioning organism on the one hand and the influencing environment on the other—is often called the interrelationship of nature." Ecology deals with such matters as changes in plants and animals (including man) and the structure and function of ecosystems. ESA adds, "Ecologists are scientists who put together pieces in our jigsaw-puzzle picture of the world."

Ecology is a small but rapidly growing field. Many young people say they want to be ecologists, which is not surprising. It is a very popular field now, for it deals with the future of our earth. A growth industry requires a pacesetter. In the case of environmental management, the pace is now being set by the ecologist. Ecology is meaningful, for the ecologist can make a contribution to society today while helping to shape the desirable society for tomorrow. It is challenging, for the ecologist must find answers to environmental problems, and then apply them.

Unlike career possibilities in natural resource management and conservation, opportunities in the field of ecology are mainly



open to college graduates who have specialized in this and related fields. The late Rachel Carson, widely credited with launching the contemporary environmental movement with her book "Silent Spring," was an ecologist.

Many excellent universities and colleges offer ecology as a major specialty. Undergraduate training in ecology should include a balanced curriculum of biological, social, and environmental health sciences. Major courses should include genetics, physiology, ecology, economics, anthropology, limnology, water quality, air quality, and oceanography. Graduate study leading to the M.S. or M.A. degree is desirable, but not essential. But a Ph. D. is generally regarded as necessary for positions of leadership. Universities are "home base" for at least 80 percent of all ecologists today.

environmental management



Environmentalist is sort of a catch-all title. It is very broad and includes all the career possibilities we have discussed so far, plus many more. For today we are involved with the total environment. The engineer at a sewage treatment plant is an environmentalist. So is the biologist studying the grass lands ecosystem. So, too, is the farmer weighing the advantage of using an insecticide or biological control on a crop. Or the housewife resisting the use of detergents. Not all are involved in the environment from a career standpoint.

If you want to be involved and if you want to make a positive contribution toward quality environment, investigate environmental job opportunities. Environmental management includes jobs for scientists, engineers, social scientists, lawyers, technicians, and aides in such disciplines as geology, meteorology, oceanography, forestry, wildlife conservation, recreation, architecture, environmental engineering, and industrial hygiene. Lay well your plans for a future that will surely be rewarding.

For further information on careers in conservation, the following organizations may be able to help you. Some of their publications may be available free on request, while others may be for sale only.

Conservation (general)

Crowell-Collier Press
866 Third Ave.
New York, N.Y. 10022

Soil Conservation Society of America
7515 NE. Ankeny Rd.
Ankeny, Iowa 50021

Natural Resources Council of America
Suite 911
1025 Connecticut Ave. NW.
Washington, D.C. 20036

The National Association of Conservation
Districts
Room 1105
1025 Vermont Ave.
Washington, D.C. 20005

Engineering

Soil Conservation Service
U.S. Department of Agriculture
Washington, D.C. 20250

Agricultural Research Service
U.S. Department of Agriculture
Washington, D.C. 20250

Forest Service
U.S. Department of Agriculture
Washington, D.C. 20250

Environmental Management

Vocational Guidance Manuals
235 E. 45th St.
New York, N.Y. 10017

Fisheries

National Wildlife Federation
1412 16th St. NW.
Washington, D.C. 20036

American Fisheries Society
Fourth Floor Suite
1319 18th St. NW.
Washington, D.C. 20036

Forestry and Forest Conservation

Forest Service
U.S. Department of Agriculture
Washington, D.C. 20250

Society of American Foresters
1010 16th St. NW.
Washington, D.C. 20036

Department of Forestry
The University of the South
Sewanee, Tenn. 37375

Chronicle Guidance Publications
Moravia, N.Y. 13118

National Forest Products Association
Technical Education Department
1619 Massachusetts Ave. NW.
Washington, D.C. 20036

U.S. Department of Health, Education,
and Welfare
Office of Education
Washington, D.C. 20202

International opportunities

U.S. Civil Service Commission
Washington D.C. 20415

Foreign Agricultural Service
U.S. Department of Agriculture
Washington, D.C. 20250

Landscape Architecture

Forest Service
U.S. Department of Agriculture
Washington, D.C. 20250

Natural Resource Conservation

Henry Z. Walck, Inc.
19 Union Square West
New York, N.Y. 10003

Nursery Industry

American Association of Nurserymen
230 Southern Bldg.
Washington, D.C. 20005

Plant Scientists

Agricultural Research Service
U.S. Department of Agriculture
Washington, D.C. 20250

Range Science and Range Management

Executive Secretary, Society for Range
Management
2120 S. Birch St.
Denver, Colo. 80222

Science and Technology

National Science Teachers Association
1201 16th St. NW.
Washington, D.C. 20036

Soil Science

Soil Conservation Service
U.S. Department of Agriculture
Washington, D.C. 20250

Wildlife Conservation

The Wildlife Society
3900 Wisconsin Ave. NW.
Washington, D.C. 20016

Conservation Department
Olin Mathieson Chemical Corp.
East Alton, Ill. 62024

National Wildlife Federation
1412 16th St. NW.
Washington, D.C. 20036

Journal of Wildlife Management
The Wildlife Society
3900 Wisconsin Ave. NW.
Washington, D.C. 20016

William C. Brown Co.
Dubuque, Iowa 52001

Wood Technology

National Forest Products Association
Technical Education Department
1619 Massachusetts Ave. NW.
Washington, D.C. 20036

For publications containing information for prospective students on financial aid, scholarships, and employment, write:

U.S. Department of Health, Education, and Welfare
Office of Education
Washington, D.C. 20202

U.S. Government Printing Office
Division of Public Documents
Washington, D.C. 20402

The American Legion Education and Scholarship Program
Americanism Division
Indianapolis, Ind. 46206

or

any local American Legion Post

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U.S. Department of Health, Education, and Welfare
Office of Education
Washington, D.C. 20202

U.S. Government Printing Office
Division of Public Documents
Washington, D.C. 20402

The American Legion Education and Scholarship Program
Americanism Division
Indianapolis, Ind. 46206
or
any local American Legion Post



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